



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:  
Paul A. Crawford

Serial No.: 10/008,106

Filed: November 9, 2001

For: PUP JOINT WITH INTEGRAL WING  
NUT RETENTION SHOULDER

Group Art Unit: 3679

Examiner: Eric K. Nicholson

Atty. Dkt. No.: FMCC:014USR1

CERTIFICATE OF MAILING  
37 C.F.R. § 1.8

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12/8/03

Date

*Mark T. Garrett*

Mark T. Garrett

DECLARATION OF PAUL CRAWFORD UNDER 37 C.F.R. § 1.132

I, Paul A. Crawford, declare as follows:

1. I am the inventor of the above-referenced patent application.
2. I am an employee of FMC Technologies, Inc., and have been for 19 years.
3. I have 19 years of experience in the oil well service and drilling industries.
4. FIG. 1 of U.S. Patent No. 5,791,693 includes a wing nut and retainer segments at the male sub end of the pup joint that have been used in the oil well service and drilling industries for many years prior to May 22, 1996, the filing date of this patent (the "Filing Date").
5. For more than 40 years, FMC Technologies, Inc. has manufactured products with wing nuts and retainer segments of the type shown in FIG. 1. Such a wing nut and retainer segments are part of a detachable nut wing union when the wing nut is mated with a female sub as part of an assembled product. FMC Technologies, Inc. has marketed such unions under the trademark "WECO" for many years prior to the Filing Date.

6. In every one of those products, the retainer segments – which together form a segmented ring – have a groove in which a snap ring is inserted to keep the wing nut from sliding off the back of the segmented ring (*i.e.*, toward the left in FIG. 1) when not mated with a female sub.

7. Prior to the Filing Date, in every instance in which a customer of FMC Technologies, Inc. ordered an assembled FMC product that included a detachable wing union male sub end connection, a groove and a snap ring positioned in the groove were included in the retainer segments.

8. Prior to the Filing Date, at least one other manufacturer – SPM Flow Control, Inc. – introduced wing unions similar to FMC's Weco® wing union into their own products. Those wing unions include the same combination of parts for a given male sub end with a detachable nut: a wing nut, a segmented ring with a groove, and a snap ring positioned in the groove.

9. In my opinion, anyone who is informed in the design and use of wing unions would understand that the prior art represented in FIG. 1 includes a snap ring positioned in a groove in the depicted retainer segments.

10. I declare that all statements made of my own knowledge are true; that all statements made on information and belief are believed to be true, and further that my statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing on the application.

12/8/03  
Date

Paul A. Crawford  
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